

CLAIMS

- 10658272-013002
1. Method of reducing the wrinkles formed in heating zones, by radiant tubes, of continuous heat treatment lines for metal strip, such as annealing or galvanizing lines, the said strip passing over transporting and/or return rollers in the said furnaces, the said method, which consists in modifying the thermal state of the rollers, wherein said modification is made directly by varying the heating by the said radiant tubes located near the rollers, thereby directly controlling the heat flux emitted by the radiant tubes towards the rollers.
  2. Method according to Claim 1, wherein each radiant tube is supplied separately and independently with combustion air and with fuel and the flow rate of fuel for each radiant tube is continuously adjusted.
  3. Method according to Claim 1, wherein the radiant tubes close to the rollers are stopped, in an anticipatory manner, so as to facilitate a strip width transition from the narrow type to the wide type.
  4. Method according to Claim 1, wherein, in the case of wide strip, the highest possible radiant tube temperature is maintained in those parts of the furnace which are located downstream.
  5. Method according to Claim 1, wherein, in the case of narrow strip, a low radiant tube temperature is maintained.
  6. Method according to Claim 1, wherein certain radiant tubes are operated in on/off mode.

7. Method according to Claim 1, wherein the heating by the radiant tubes is varied so as to reduce, or even eliminate, the thermal gradient in the furnace between the bottom rollers and the top rollers of the latter.
8. Method according to Claim 1, further including programmed management of the strip-heating curves, which is tailored to the strip formats and to the heat cycles, in the steady state or during the transient phases.

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